

# Exhibit A

AMENDMENT UNDER 37 C.F.R. §1.111  
U.S. Appl. No. 10/779,740

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

### LISTING OF CLAIMS:

1. (original): A nitride semiconductor substrate having a diameter of 10 mm or more, which has a single-layer structure composed of a nitride semiconductor layer having a basic composition represented by  $\text{Al}_x\text{Ga}_{1-x}\text{N}$  ( $0 \leq x \leq 1$ ) or a multi-layer structure comprising said nitride semiconductor layer, the mass density of said nitride semiconductor layer being 98% or more of a theoretical mass density  $\rho(x)$  represented by the following general formula (1):

$$\rho(x) = \frac{4(M_x + M_N)}{\sqrt{3}a_x^2c_xN_a} \dots (1)$$

wherein  $a_x = a_{\text{GaN}} + (a_{\text{AlN}} - a_{\text{GaN}})x$ , wherein  $a_{\text{GaN}}$  represents an a-axis length of GaN, and  $a_{\text{AlN}}$  represents an a-axis length of AlN;  $c_x = c_{\text{GaN}} + (c_{\text{AlN}} - c_{\text{GaN}})x$ , wherein  $c_{\text{GaN}}$  represents a c-axis length of GaN, and  $c_{\text{AlN}}$  represents a c-axis length of AlN;  $M_x = M_{\text{Ga}} + (M_{\text{Al}} - M_{\text{Ga}})x$ , wherein  $M_{\text{Ga}}$  represents the atomic weight of Ga, and  $M_{\text{Al}}$  represents the atomic weight of Al;  $M_N$  represents the atomic weight of nitrogen; and  $N_a$  represents Avogadro's number.

2. (original): The nitride semiconductor substrate according to claim 1, wherein it is a self-supported substrate composed of said nitride semiconductor layer.

3. (original): The nitride semiconductor substrate according to claim 2, wherein said nitride semiconductor layer has a thickness of 200  $\mu\text{m}$  or more.